

IN THE CLAIMS:

Please amend the claims as follows:

1. (Original) A transparent oxide electrode film having indium oxide containing titanium as its main component, wherein indium in said indium oxide is substituted with titanium at a titanium/indium atomic ratio between 0.003 and 0.120, said indium oxide is crystalline, and the resistivity of said transparent oxide electrode film is up to $5.7 \times 10^{-4} \Omega\text{cm}$.
2. (Original) A transparent oxide electrode film according to claim 1, wherein said titanium/indium atomic ratio is between 0.003 and 0.050, and the resistivity of said transparent oxide electrode film is up to $4.0 \times 10^{-4} \Omega\text{cm}$.
3. (Currently Amended) A transparent oxide electrode film according to ~~either one of claim 1 and claim 2~~, wherein the average light transmittance for wavelengths between 1000 nm and 1400 nm is at least 60%.
4. (Currently Amended) A transparent oxide electrode film according to ~~any one of claim 1 through claim 3~~, wherein the carrier electron concentration given by Hall effect measurement is up to $5.5 \times 10^{20} \text{ cm}^{-3}$.
5. (Original) A transparent oxide electrode film according to claim 4, wherein the carrier electron concentration given by Hall effect measurement is up to $4.0 \times 10^{20} \text{ cm}^{-3}$.

6. (Currently Amended) A transparent oxide electrode film according to ~~any one~~ of claim 1 ~~through claim 5~~, wherein the carrier electron mobility given by Hall effect measurement is at least $40 \text{ cm}^2/\text{Vsec}$.

7. (Original) A transparent oxide electrode film according to claim 6, wherein the carrier electron mobility given by Hall effect measurement is at least $60 \text{ cm}^2/\text{Vsec}$.

8. (Original) A transparent oxide electrode film according to claim 6, wherein the carrier electron mobility given by Hall effect measurement is at least $70 \text{ cm}^2/\text{Vsec}$.

9. (Original) A transparent oxide electrode film having indium oxide containing titanium and tungsten as its main component, wherein indium in said indium oxide is substituted with titanium and tungsten at a ratio which when the titanium/indium atomic ratio is deemed x and the tungsten/indium atomic ratio is deemed y , satisfies an equation (1),

$$0.019 - 1.90x \leq y \leq 0.034 - 0.28x \quad (1)$$

and wherein said indium oxide is crystalline, and the resistivity is up to $5.7 \times 10^{-4} \Omega\text{cm}$.

10. (Original) A transparent oxide electrode film according to claim 9, wherein when the titanium/indium atomic ratio is deemed x and the tungsten/indium atomic ratio is deemed y , said ratio satisfies an equation (2)

$$0.019 - 1.27x \leq y \leq 0.034 - 0.68x \quad (2)$$

and wherein said resistivity is up to $3.8 \times 10^{-4} \Omega\text{cm}$.

11. (Currently Amended) A transparent oxide electrode film according to ~~either one of claim 9 and claim 10~~, wherein the average light transmittance for wavelengths between 1000 nm and 1400 nm is at least 60%.

12. (Currently Amended) A transparent oxide electrode film according to ~~any one of claim 9 to claim 11~~, wherein the carrier electron concentration given by Hall effect measurement is up to $5.5 \times 10^{20} \text{ cm}^{-3}$.

13. (Original) A transparent oxide electrode film according to claim 12, wherein the carrier electron concentration given by Hall effect measurement is up to $4.0 \times 10^{20} \text{ cm}^{-3}$.

14. (Currently Amended) A transparent oxide electrode film according to ~~any one of claim 9 through claim 13~~, wherein the carrier electron mobility given by Hall effect measurement is at least $40 \text{ cm}^2/\text{Vsec}$.

15. (Original) A transparent oxide electrode film according to claim 14, wherein the carrier electron mobility given by Hall effect measurement is at least $60 \text{ cm}^2/\text{Vsec}$.

16. (Original) A transparent oxide electrode film according to claim 15, wherein the carrier electron mobility given by Hall effect measurement is at least 70 cm^2/Vsec .

17. (Currently Amended) A manufacturing method for a transparent oxide electrode film according to ~~any one of claim 1 through claim 16~~, wherein said transparent oxide electrode film is deposited by a sputtering method using either a sputtering target manufactured from an oxide sintered body for which the constituent elements are substantially indium, titanium and oxygen, or a sputtering target manufactured from an oxide sintered body for which the constituent elements are substantially indium, titanium, tungsten and oxygen, at a substrate temperature of at least 100°C, using a mixed gas of argon and oxygen containing at least 0.25% oxygen as the sputtering gas.

18. (Currently Amended) A transparent electroconductive base material, wherein a transparent oxide electrode film according to ~~any one of claim 1 through 16~~ is formed on a transparent substrate.

19. (Original) A transparent electroconductive base material of Claim 18, wherein the average light transmittance in the wave length range from 1000 nm to 1400 nm is at least 60%, and wherein the surface resistance is up to 30 Ω/\square .

20. (Currently Amended) A solar cell, which uses a transparent oxide electrode film according to ~~any one of claim 1 through 16.~~

21. (Currently Amended) A solar cell according to claim 19 having a sequentially layered construction comprising either one of a substrate on which an electrode layer is provided and a conductive metal substrate, and further comprising a light absorbing layer of a p-type semiconductor provided on said substrate, a middle layer of an n-type semiconductor provided on said light absorbing layer, a window layer of a semiconductor provided on said middle layer, and an n-type transparent electrode layer provided on said window layer, wherein ~~a transparent oxide electrode film according to any one of claim 1 to claim 16 is used as said transparent electrode layer~~ said transparent electrode layer is a transparent oxide electrode film having indium oxide containing titanium as its main component, wherein indium in said indium oxide is substituted with titanium at a titanium/indium atomic ratio between 0.003 and 0.120, said indium oxide is crystalline, and the resistivity of said transparent oxide electrode film is up to $5.7 \times 10^{-4} \Omega\text{cm}$.

22. (Currently Amended) A solar cell according to claim 20 having a sequentially layered construction comprising a transparent electrode layer provided on a

transparent substrate, a window layer of a semiconductor provided on said transparent electrode layer, a middle layer of an n-type semiconductor provided on said window layer, and a light absorbing layer of a p-type semiconductor provided on said middle layer, wherein ~~a transparent oxide electrode film according to any one of claim 1 to claim 16 is used as said transparent electrode layer~~ said transparent electrode layer is a transparent oxide electrode film having indium oxide containing titanium as its main component, wherein indium in said indium oxide is substituted with titanium at a titanium/indium atomic ratio between 0.003 and 0.120, said indium oxide is crystalline, and the resistivity of said transparent oxide electrode film is up to $5.7 \times 10^{-4} \Omega\text{cm}$.

23. (Currently Amended) A solar cell according to ~~either one of claim 21 and claim 22~~, wherein said light absorbing layer is at least one member selected from the group of CuInSe_2 , CuInS_2 , CuGaSe_2 , CuGaS_2 and a solid solution of these compounds, and CdTe .

24. (Currently Amended) A solar cell according to ~~any one of claim 21 through claim 23~~, wherein said middle layer is either one of a solution precipitated CdS layer and a $(\text{Cd}, \text{Zn}) \text{S}$ layer.

25. (Currently Amended) A solar cell according to ~~any one of claim 21 through claim 24~~, wherein said window layer is either one of ZnO and (Zn, Mg) O.

26. (Currently Amended) A photo detection element comprising a pair of electrodes and a layer of photo detection materials interposed between the said electrodes, wherein the transparent oxide electrode film according to ~~any one of claim 1 through claim 16~~ is used as at least one of the said electrodes.

27. (Currently Amended) A photo detection element according to claim 26, wherein the said layer of photo detection ~~material~~materials is a layer of infrared light detection materials and the photo detection element is for detecting infrared light.